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By-Entwisle, Doris R.; Garvey, Catherine

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Although universally acknowledged to be important, the relation between language and cognition is far from clear. While this paper also "sidesteps" this relation, it presumes that less elaborate language is linked to less differentiated cognitive activity. The study described here was aimed at collecting data on language usage for children (and some adults) with known IQ, racial, and social class characteristics and investigating the actual degree of differentiation in language usage. Data are presented on the free use of adjectives, and also on rates of verbal production when the amount of such production is largely determined by the producer. From a large survey of Maryland ninth graders, plus smaller samples of fifth- and sixth-grade blacks, middle-class white adults, and lower-class white women, the use of 30 high-frequency adjectives was observed in written productions. It was found that (1) there was no difference in adjective usage (common adjectives only) by race, (2) there were large sex differences in verbal productivity, (3) females use more adjectives than males, even with productivity controlled, and (4) social class differences were minimal. (Authors/AMM)

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THE JOHNS HOPKINS UNIVERSITY

REPORT No. 41

THE CENTER FOR THE STUDY OF SOCIAL ORGANIZATION OF SCHOOLS

ADJECTIVE USAGE

DORIS R. ENTWISLE AND CATHERINE GARVEY

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The Johns Hopkins University

Baltimore, Maryland

Adjective Usage[1]

by Doris R. Entwisle and Catherine Garvey

Introduction. Although universally acknowledged to be important, the relation between language and cognition is far from clear. Despite much recent research it has been difficult to get clear-cut experimental evidence of how language, or use of language, bears on cognitive activities like perception, concept attainment, problem-solving and so forth. Those interested in social class differences in cognition and the causes of these differences have, taking their lead from Bernstein (1961, 1962), posited elaborated and restricted language codes, and then assumed that differences in codes across social classes (which are often only hazily specified) reflect underlying differences in cognitive style or organization, as well as different styles of social adaptation to speech situations.

Like so many others, this paper also sidesteps the main issue of the relation between language and cognition, although it too presumes that less elaborate language is linked to less differentiated cognitive activity. Its main purpose is to collect data on language usage for children (and some adults) with known IQ, racial, and social class characteristics and so to investigate the actual degree of differentiation in language usage. Data are given here on the free use of adjectives (one possible index of the elaborateness of a code) (Bernstein, 1962; Lawton, 1964) and also on rates of verbal production when the amount of such production is largely determined by the producer.

Little of the large body of recent work directed toward verbal behavior or toward language and cognition deals with the free use of language. Instead investigators may manipulate some kind

of paired associate linkage, where associates consist either of real words or of nonsense syllables, or even more simply, collect free associations from different kinds of persons. Such procedures obviously sample only tiny amounts of language under tightly controlled conditions. Other popular procedures require subjects to describe an object (encode), or select an object according to a description provided (decode), both tasks favoring short utterances and a concentration upon a stimulus' salient characteristics. Even studies getting large samples of language (Chotlos, 1944; Bernstein, 1962) very often fix production rates.

Exceptions to the trend of analyzing only very constrained samples of language include the studies of Hess and his coworkers (1968) on children's cognitive environments and Williams' (1968) analysis of data from the Detroit Dialect Study, to be discussed later.

To sum up, this paper reports data on the incidence of a selected set of adjectives (qualifiers) in verbal productions of males and females of different ages (fifth-grade, sixth-grade, 9th-grade, adult), and with different racial and/or social class characteristics. It also reports upon verbal productivity for these same groups. The underlying assumption is that an individual who perceives his surroundings in relatively undifferentiated and unelaborated form will tend to use few qualifiers and descriptors, and this trend might be reflected in a lesser incidence of items from the adjective word class.

METHOD

The data consist mainly of the number of high-frequency adjectives (selected from the Thorndike-Lorge AA list) contained in oral and written productions of children and adults. Two kinds of data are represented:
(1) a small number (N = 12) of oral productions consisting of spontaneous conversation and some narrative material recorded during sessions of a simulation game (McFarlane, 1969)
(2) a large number (N = 791) of written productions, consisting of stories written to pictures designed to be high in need Achievement or curiosity cues. (For a detailed description of these pictures and the testing conditions, see Greenberger and Entwisle (1968).) Briefly the pictures show one or more individuals in a clearly recognizable situation (in school, in a laboratory, playing ball, etc.). The respondent is asked to tell a story about each picture - not just to describe it.[2]

Adjective Selection. As an index of the use of qualifiers, the occurrence of 30 adjectives (see Table 1) in verbal and written productions was counted. The 30 adjectives are high-frequency adjectives according to the Thorndike-Lorge G Count ("AA" words, occurring 100 or more times per million in 4 word counts (see Thorndike and Lorge, 1944).) First, all AA adjectives were listed. Using Hill's (1958) taxonomy, words from the AA category were assigned to position classes as follows:

CLASS	VI	V	IV	III	II	I
EXAMPLES	all both half	articles and demonstratives	numbers	rich fine	old new little blue	stone silk wooden

Only adjectives from classes III, II, and I were retained. The others, predeterminers (VI), determiners (V), and numbers (IV) were excluded. (See Hill for details of class assignment) The 30 adjectives in the final list were selected partly to overlap previous lists and partly for reasons of avoiding ambiguity ("mean" can be a noun, a verb or an adjective). In addition, if two words were equally acceptable on all other grounds, a choice was made in terms of whether we thought the word would be likely to be used in everyday speech by modern children. For instance "golden" and "winged" seem on intuitive grounds to be much less likely to occur than "glass" or "wonderful". The 30 high-frequency adjectives were the only adjectives counted[3] and no attempt was made to count adjectival phrases or clauses. Thus there is no way to estimate the total use of qualifiers and no reason to believe the relation between the selected set of adjectives and total qualifiers is the same from group to group.

Oral Productions. Oral productions of 10 blacks and 2 whites were analyzed (See Table 2). All recordings were taken at three Baltimore Community Action Agency local offices while male Ss, aged 11 or 12, played the Parent-Child game (see McFarlane, 1969). All were residents of the inner city, comparable in SES to blacks and whites labelled "inner city" in Table 3 (written productions). Each of the recording sessions lasted approximately 1 1/2 hours and included an average of 5 plays of the game. The data consist of transcriptions of the tape recorded sessions. The progress of the game is the major topic of conversation. Other topics include short narratives or references by the participants to events in their daily life. The verbal productions occurred spontaneously during the course of play.

Written Productions. Written data obtained as part of several other studies have been analyzed (Socialization, Social Class and Cognitive Style Program, 1967-69.) The data for both adults and children are stratified according to sex and social class or sub-cultural group. Children are also stratified by IQ. Table 3 shows the incomplete factorial design of this survey. Table 4 gives counts for total high-frequency adjectives and total words produced for the strata of the sample. Table 5 shows separate counts for individual high-frequency adjectives by sample strata.

The written verbal productions consist of stories based on a new series of eight need Achievement pictures (four for boys and four for girls) suitable for ninth-graders. Subjects had no inkling that adjectives would be counted. The instructions were the "neutral" ones for need Achievement testing and specifically include the statement: "We are not interested in spelling or grammar". In addition some stories in response to Beswick's (1965) pictures, highly cued for curiosity themes, have been analyzed for some subjects (see Table 3), and these likewise were secured under conditions of "neutrality" as far as adjective responses are concerned.

A brief description of sample strata follows.

"Inner city" children from both Baltimore, Md. and Harrisburg, Penna. reside in the core of the city and are identified as the most impoverished residents of the city; their houses are ghetto dwellings rented on a weekly basis. "Blue collar" children live at the edge of the city (black) or in the suburbs (white) where heavy industry is also located; their homes are about half rented, and half owned, usually "row" houses. "Middle class" children live in the residential suburbs in individual homes whose value ranges between $15,000 and $45,000. One sample is drawn from a suburb where many persons (90%) are of Jewish extraction; the

other middle class sample probably includes less than 1% Jewish children. "Rural" children live about 30 miles from Baltimore City in an area largely devoted to farming. Values of homes of rural children have a tremendous range, from house trailers to estates devoted to horse breeding. Very few blacks are present in any sampled area outside the city.

Table 4 gives counts of the total number of high frequency adjectives produced for each sub-group, the total number of words produced by each sub-group, the average number of words produced per person, and the average adjective production rate for sub-groups (number of high-frequency adjectives divided by total number of words for each subgroup.)

RESULTS

Ninth Grade Data. At every age and social class level females produce more words per story than males. (Stories were obtained simultaneously from male and females so testing conditions were identical for the two sexes.) The sex difference is smallest for high IQ middle class non-Jewish children, greatest for middle class Jewish children, and of about the same size in the remaining strata. Even for allowing the greater female productivity in words per story, one notes that more adjectives are being used by females (Table 4, last column) in 10 out of 13 possible comparisons (inner city whites and Jewish middle class are the exceptions). Put another way, the proportion of adjectives to total number of words is generally higher for females. It is especially noteworthy that these sex differences persist in the one adult sample where such a comparison can be made.

Testing conditions were designed to be constant across schools, but any variability among schools in testing conditions tends to be confounded with IQ and social class differences. (The experimenters had no control over announcements which might come over a school's public address system, for instance, or over other distractions like cars or trains passing nearby.) Girls of average IQ produce stories of approximately the same length (around 300 words for 4 stories) across all subcultural groupings except possibly rural girls (255.1). The rates for low IQ girls (210.0 and 218.7) are close, and considerably below the average IQ girls' rates. High IQ girls produce above 300 words on the average, except for rural high IQ girls who produce close to the rate for average IQ non-rural girls. Women teachers are producing words at about the same rate as average IQ or high IQ girls.

For boys of average IQ, rates of word production for 4 stories hover around 250, except for rural boys (196). The two rates for low IQ boys (168.8 and 180.2) are comparable. The rates for high IQ boys run under 300, and fall below the rates for average IQ girls in the same subgroup with one exception (rural). The adjective rate (expressed as the ratio of the number of selected adjectives to total word production) for both boys and girls is highly variable, ranging from 107.4 to 234.1 for boys, and from 90.8 to 198.4 for girls. Jewish children generally use many more adjectives than other children, and this is especially true of boys.

From Table 4 it is obvious that IQ has a decided influence on both productivity and on the rate of adjective production. Inner city children, both black and white, tend to have IQ test scores lower than those of children in the suburbs, and Jewish children's scores generally exceed those of other groups. Any

summary table of the present data is misleading, then, unless the actual IQ distributions are taken into account, for the strata sampled are definitely not representative of such sub-populations generally in IQ composition. There is no good way to do this precisely with the data at hand, but identifying certain sub-groups as "typical" of a particular social class level (low IQ inner city, etc.), might lead one to a social class distribution like that given below:

	Inner City		Blue Collar		Middle Class Non-Jewish		Jewish	
	Prod.	Adj. Rate	Prod.	Adj. Rate	Prod.	Adj. Rate	Prod.	Adj. Rate
Girls	210.0	146.5	297.7	114.1	311.0	145.8	344.3	112.4
Boys	168.8	158.2	242.2	147.2	285.0	198.8	263.1	107.4

This distribution reveals wide differences in productivity by sub-group, but with that taken into account, adjective rates do not exhibit consistent patterns from one group to another.

Several variance analyses clarify the role of race, sex, IQ and/or social class.

For <u>average</u> IQ children, with race (black vs. white) and social class (inner city vs. blue collar) as factors, neither race nor social class accounts for significant variance. In fact sex is the only significant effect. When the social class dimension is extended to include two middle class groups and the rural group, social class is significant($p < .01$).

With IQ as a factor, comparing low vs. medium IQ for inner city vs. blue collar blacks, IQ itself is significant and the sex x IQ interaction is borderline ($p \cong .06$). Similarly for the 4

white suburban groups with IQ at medium and high levels, the Sex x IQ x Social Class interaction is significant and the Sex x Social Class and IQ x Social Class interactions are significant.

Data for Elementary School Age Children, Oral and Written. The sixth grade written productions are best compared with inner-city black low-IQ ninth graders. There is again a noticeable sex difference, and, as one would expect, a lower rate of total word production. The adjective rate appears to be much lower.

These data were secured in response to two different kinds of pictures - need Achievement and curiosity. Although overall productivity does not differ greatly according to the type of picture used to elicit stories, there does appear to be a sizeable difference in adjective rate (194 vs. 285 and 255 vs. 344) depending upon which set of pictures is used.

The oral productions of fifth-grade boys, median age 11.9 (Table 2) lend credence to the notion that the adjective rate for inner city boys is generally low, as suggested from the written samples (Table 4). Rates of adjective usage appear to differ markedly between oral and written productions, but this may be entirely attributable to the specific circumstances under which oral and written data are procured. One would expect a game to elicit conversation with few adjectives, and a story written (or told) about a picture to contain a fair number of adjectives. Or, since more time is available for planning in written productions, this channel may facilitate selection of adjectives.

Use of Specific Adjectives. Table 5 gives separately for each sex, the subgroups' distributions of specific adjectives in percentages, excluding the oral productions. Thus inner city black boys of average IQ produce 30 adjectives, and 20% of those produced are the word "high". Reading across the table one can compare the relative percentages for the various strata on particular words.

Data of this kind are notoriously difficult to handle. Nevertheless one can see that the density of numbers in the girls' half of the table is greater. Girls generally use more adjectives, as we saw above, and the greater density implies that they use more different adjectives. There are 40 more girls than boys in the ninth-grade sample. The larger number of girls responding of course contributes to the difference in total number of different adjectives emitted, but probably is not enough to account for it entirely. A few words appear to be used heavily by all groups - "high", "new", "old", "young". There do not appear to be any very marked changes in usage from one subcultural group to another for this list of adjectives (all very common ones).

DISCUSSION

The earliest fabricators of mental tests remarked the greater verbal fluency of girls compared to boys, and test makers have traditionally tried to eliminate sex differences. This action perhaps has had unfortunate consequences because it has de-emphasized sex differences in language development that probably have important educational implications. For instance, the higher rate of failing to learn to read in boys, and the concomitant high

retention rate for boys in first grade, have not received the attention they deserve. Notwithstanding Ervin-Tripp's (1966) statements that formal differences in men's and women's (English) language are relatively small and that sex differences in American children's language are slight, Heider, Cazden and Brown's (1968) recent findings of no sex differences in encoding and decoding for middle and lower class 10-year olds, or Chotlos' finding of minimal sex differences in written language for children from 8 to 19 years of age, greater verbal productivity, in total amount and in the relatively greater proportion of high-frequency adjectives, characterizes <u>every</u> male-female comparison in the data presented here. The overall sex difference (last line Table 4) is about 60 words in productivity, and when this is allowed for, girls still use more adjectives than boys. It is especially noteworthy that middle class teachers, whom one might suppose to be highly selected compared to adults in general on verbal attributes, display the same variety of sex differences.

The inconsistency between our findings and those of others with respect to sex may be attributable in part to the limited social class variability of most language sampling. For middle class whites, the focus of most studies of this type, the sex difference is very small. More important, however, is that most studies in fact suppress this sex variability by imposing severe constraints on the type of language behavior sought. Where only a few words are asked for, sex differences are easily obscured.

The present data point up differences associated with IQ and agree with Chotlos' (1944) finding that higher IQ individuals use a proportionately greater number of adjectives, but since IQ and social class are confounded in the population at large, the interpretation is problematic. As the incomplete factorial design

used in the present study testifies, in lower social class groupings it is hard to find children with high IQ's and for the higher social class groupings it is hard to find low IQ students. It makes no logical difference whether one says "IQ" or "social class" in labelling the differences between the sub-groups distinguished in this study, yet it does have enormous significance for identifying causal mechanisms or possible remedial actions which variable one invokes. Clearly, verbal productivity is correlated with IQ level, but IQ measurement depends in no small part on verbal productivity of other closely-related kinds -- vocabulary knowledge, stating similarities, explaining proverbs and so on. By "controlling" on IQ, one effectively throws out most of the variability in the dependent variable (i.e. productivity).

Productivity (total words emitted) differs considerably from one social sub-group to another. The data here are thus consistent[4] with Irvin's (1960) data showing fluency deficits in working class homes by 18 months of age, and with Williams' (1968) finding of productivity differences in fifth and sixth grade children. For samples composed of equal numbers of black and white children, Williams analyzed free responses to questions like "What are your favorite TV programs?" or "What kinds of games do you play around here?" He found greater productivity in high status than in low status children even though field workers used more probes with low status children. Although Bernstein's (1962) procedure consisted of sampling a fixed number of words so productivity differences between middle class and working class groups are suppressed, one guesses that there would have been such differences from Bernstein's (p. 222) statement: "Two members of the working class sample...were omitted from the analysis as neither contributed a long utterance and the total number of words for each was under 90 words."

In terms of social class, within sex groups, and in terms of the "typical" IQ distribution within social classes, the rates of adjective usage appear similar. It is noteworthy that inner city and blue collar boys both exceed middle class non-Jewish boys when productivity is controlled for. This is at odds with Bernstein's finding that proportionately more adjectives are used by "middle class" than by "working class" boys, where class is defined by type of school attended. The obvious explanation is that speech differences by social class are greater in England than in the U.S., however, that seems a far-reaching conclusion to draw from so little data. It is hard to compare Bernstein's results with ours because he cites only Mann-Whitney u values, but the difference most likely stems from our counting of a set of common adjectives, compared to his counting of all adjectives. A study by Lawton (1964), modelled after Bernstein's (1962) study, points to the counting of only some adjectives vs. all adjectives as the explanation. Lawton secured four essays on four different topics, each written in 30 minutes, from 10 working class and 10 middle class English boys, carefully matched for IQ. When all adjectives were counted, there were no significant differences between the class groups "because the working-class boys tended to use the same adjectives over and over again". By excluding all repetitions of an adjective and also excluding some very common adjectives, a significant difference was produced. Lawton thus fails to replicate Bernstein's finding except in terms of uncommon adjectives. This clarifies the discrepancy between Bernstein's data and ours. Lawton finds an interaction between age and social class in the use of uncommon adjectives: the increase in adjective usage for boys between 12 and 15 years of age is five times as large for middle class as opposed to working class boys.

The total productivity in Lawton's boys is greater for the middle class (319 words) than for the working class (219 words). It is very surprising that this rate of word production is exceeded by every subgroup in our samples except low IQ black boys and rural boys although we allowed only 4 minutes for writing rather than 30! An extravagant time allowance may foster appearance of more rare adjectives.

Lawton, like us, emphasizes a productivity difference: (p. 134) "...that boys of very similar measured ability produce such strikingly different amounts of written work in a 30-minute period needs close examination...(It) cannot be argued that the working class groups produce quality rather than quantity...by linguistic measures...nor by...content." Nor should it be overlooked that Heider et al. (1968) note much greater "fluency" in middle class than in lower class children's encodings, suggesting again that qualitative differences, when found, are a consequence of quantitative differences.

In some ways the study most comparable to ours is that of Hess and his associates (1968) on cognitive environments of preschool children. Among many measures taken is one of "adjective range". Samples of language are given to two projective-type stimuli by black mothers of four social status levels(middle class, skilled, semi-skilled father present, and semi-skilled father absent). No statistically significant differences in adjective range are associated with status level. (The "adjective range" is defined by Hess et al. as the number of different adjectives used, excluding repetitions divided by the total number of nouns.) Table 5 shows that ninth-grade girls in our sample use a narrow range of adjectives --- from 9 to 14 different adjectives no matter

what their IQ or status level. Our data is thus consistent with Hess et al.'s. What seems important in Hess et al.'s study is that the same stimulus situation evokes much more verbal behavior in some mothers than others, i.e. again the productivity differences stand out. In day-to-day situations where parents take actions that have import for socialization, the frequency or duration of an action, rather than its detailed properties, may be the over-riding factor. Highly productive parents tend to have children with high fluency rates.

In conclusion we note that differences in adjective usage by race - the question that initially prompted this study - are apparently non-existent with social class (IQ) and sex controlled.[5] This agrees with Heider, Cazden and Brown's (1968) observation that race had no impact on coding effectiveness or style. Sex differences are particularly noticeable at lower social class levels, a finding consistent with lower class child-rearing patterns (only minor differentiations are made between parents' expectations for middle class boys and girls but much more role differentiation is forced upon children by lower class parents) and with Hess's (p. 193) observation that verbal behavior in boys is reinforced less by lower class black mothers than similar behavior in girls.

SUMMARY

Although statements of causal relationships between language structure and cognitive structures, on the one hand, and between language structure and social structures on the other hand have long been suspect, it is increasingly recognized that speech is

a major factor in the socialization process. It is reasonable to expect that differences in speech behavior will be associated with the more important dimensions of early socialization and may even be relatively stable at different points in time. The dimension of sex does seem to reflect a consistent quantitative difference in speech behavior as measured in this study.

Footnotes

[1] We are indebted to Peter Houts, Hershey Medical Center, for gathering the Harrisburg, Penna. data, and to Gudmund Hernes for gathering the middle class adult data. The assistance of staff and students of several junior high schools in Baltimore City and Baltimore County where data were collected is gratefully acknowledged, though the schools must remain anonymous.

[2] Four pictures are used as the basis for story writing. These pictures are <u>different</u> for boys and girls. Picture 1 and 4 are

Ave. No. of Words Girls Exceed Boys	Picture Number	Boys' Version	Girls' Version
13	1	Boy sitting in Classroom	Girl sitting in Classroom
13	2	Shop scene	Office scene
17	3	Baseball game	Hostess receiving guests
12	4	Boys in laboratory	Girls in laboratory

almost duplicates except for the actors whose sex is the same as that of the respondent (boys in pictures shown to boys and girls in pictures shown to girls). Pictures 2 and 3 are not equivalent in this sense. The average sex difference in number of words responded to individual pictures is shown in Table 4. The girls exceed boys for every picture and by very nearly the same amount except for Picture 3. The overall excess of girls over boys is similar from one picture to another. Differences between pictures do not therefore cause the sex differences in productivity noted.

3 Except in the game sessions, in which total adjectives of classes VI, III, II, I were also counted. See Table 2.

4 An apparent inconsistency is the lower adjective rate for rural children. Chotlos, in samples of 3000 words, found no rural-urban difference on counts of adjectival types and tokens. He defines "rural" children as those attending one-room schools, "urban" children as those from towns with less than 25,000 inhabitants.

5 We cannot make black-white comparisons for rural children because only data for white rural children were obtained. Baughman and Dahlstrom (1968) note productivity differences by race in children dwelling in rural North Carolina, but this may be a consequence more of IQ differences - whites are 10 to 15 points higher in Stanford-Binet IQ.

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Table 1. High Frequency[a] Adjectives, Counted in Verbal Productions.

Adjective	Class[b]	Adjective	Class	Adjective	Class
Black	II	High	II	Poor	III
Clean	III	Human	I	Pretty	III
Cold	III	Important	III	Right	I
Cotton	I	Kind	III	Soft	III
Dark	II	Large	II	Straight	II
Deep	II	Left	I	Tall	III
Fat	III	Modern	I	West	I
Foreign	I	New	II	White	II
Glass	I	Nice	III	Wonderful	III
Happy	III	Old	II	Young	II

[a] All adjectives are AA in the Thorndike-Lorge word count.

[b] See the definition of Class, p. 3 .

Table 2. Adjective Count Data, Parent-Child Game Sessions, 1968

Subject Number	Average Words Per Speech Act	Total Words/ Total Adjectives[a]	Total Words/T.High Frequency Adjects.[b]
1	8	64	815.5
2	8	65	400.8
3	9	58	798.7
4	4	162	-----
5	8	99	642.5
6	6	57	415.3
7	6	35	195.6
8	5	25	249.5
9	9	21	1293.0
10	8	37	804.0
11[c]	9	31	332.0
12[c]	19	35	449.0

[a]All adjectives and adjectivals in prenominal position and as predicate adjectives except numerals and demonstrative pronouns are counted.

[b]Only the adjectives listed in Table 1 are counted.

[c]Subject numbers 11 and 12 are the white subjects.

Table 3. Design of Study for Written Productions.
Entries are Number of Respondents in Each Stratum.

9th Graders

	Inner City			Blue Collar				Rural	
	Black		White	Black		White		White	
	AvIQ	LoIQ	AvIQ	AvIQ	LoIQ	AvIQ	HiIQ	AvIQ	HiIQ
Boys	29	30	16	25	21	30	19	29	20
Girls	41	30	16	30	22	30	30	28	30

	9th Graders Upper Middle Class				6th Graders Inner City
	White Jewish		White Non-Jewish		Black
	AvIQ	HiIQ	AvIQ	HiIQ	(Mean IQ = 90.6)[a]
Boys	21	20	2 p	30	21
Girls	30	16	20	30	26

	Adults (Jr. High School Teachers)	Adults (Parents of children living close to center of Baltimore)
Men	31	
Women	38	10

[a] Of 47 students one is white. No IQ scores were available on two students. For the remaining 45 students, the average IQ (Thorndike-Lorge) is 90.6 .

Table 4. Adjective Count from Need Achievement and Curiosity Stories. [a,b]

	No. of persons	Aver. No. of Adj. per person	Aver. Words per person in 4 stories	Total No. Adj. in 4 stories	Total No. Words in 4 stories	Adjective Rate
Inner City, Sixth-graders, N Ach stories[c]						
Blacks						
Girls	26	0.96	186.3	25	4843	193.7
Boys	21	0.57	145.6	12	3057	254.8
Inner City, Sixth-graders, Curiosity stories						
Girls	26	0.69	197.0	18	5123	284.6
Boys	21	0.43	147.4	9	3096	344.0

a All data were collected by Doris Entwisle and Ellen Greenberger in or near Baltimore, Md., except for sixth-grade which were collected by Peter Houts in Harrisburg, Penna.

b "Average IQ" students have IQ's in the range 95 to 114 or SCAT scores between 39th and 60th percentile on national norms.

"Low IQ" students have IQ's in the range 70-85.

"High IQ" students have IQ's in the range 128-up or SCAT scores above the 92nd percentile on national norms.

c The same students gave both need Achievement and curiosity stories.

Table 4. continued

	No. of persons	Aver. No. of Adj. per person	Aver. Words per person in 4 stories	Total No. Adj. in 4 stories	Total No. Words in 4 stories	Adjective Rate
Inner City, Ninth-graders, N Ach Stories						
Blacks						
Girls (Ave. IQ)	41	2.10	302.4	86	12398	144.2
Boys (Ave. IQ)	29	1.03	242.2	30	7024	234.1
Girls (Low IQ)	30	1.43	210.0	43	6299	146.5
Boys (Low IQ)	30	1.07	168.8	32	5063	158.2
Whites						
Girls (Ave. IQ)	16	1.81	323.1	29	5169	178.2
Boys (Ave. IQ)	16	1.75	267.4	28	4279	152.8
Total, Inncr City (equally weighted)						
Girls	87		278.5			156.3
Boys	75		226.1			181.7

Table 4. continued

	No. of persons	Aver. No. of Adj. per person	Aver. Words per person in 4 stories	Total No. Adj. in 4 stories	Total No. Words in 4 stories	Adjective Rate
Blue Collar, Ninth-graders, N Ach stories						
Blacks						
Girls (Ave. IQ)	30	2.47	330.5	74	9915	134.0
Boys (Ave. IQ)	25	1.44	248.9	36	6222	172.8
Girls (Low IQ)	22	2.41	218.7	53	4812	90.8
Boys (Low IQ)	21	1.52	180.2	32	3784	118.3
Whites						
Girls (Ave. IQ)	30	2.70	297.3	81	8918	110.1
Boys (Ave. IQ)	30	1.50	248.9	45	7466	165.9
Girls (High IQ)	30	2.83	344.4	85	10332	121.6
Boys (High IQ)	19	2.21	290.9	42	5528	131.6
Total, Blue Collar						
Girls	112		297.7			114.1
Boys	95		242.2			147.2

Table 4. continued

Adults	No. of persons	2 N Ach stories		2 cur. stories		Aver. Words per person		Adjective Rate	
		Total No. Adj.	Total No. Words	Total No. Adj.	Total No. Words	2 N Ach stories	2 curiosity stories	2 N Ach stories	2 curiosity stories
Middle Class									
Women	38	58	6063	48	5726	159.6	150.7	104.5	119.3
Men	31	34	4227	30	4072	136.4	131.4	124.3	135.7
Lower Class									
Women	10	5	1218	9	1006	121.8	100.6	243.6	111.8

Table 4. continued

	No. of Persons	Aver. No. of Adj. per Person	Aver. Words per Person in 4 stories	Total No. Adj. in 4 stories	Total No. Words in 4 stories	Adjective Rate
Rural, Ninth-graders, N Ach Stories						
Whites						
Girls (Ave. IQ)	28	1.29	255.1	36	7143	198.4
Boys (Ave. IQ)	29	0.93	197.7	27	5675	210.2
Girls (High IQ)	30	1.93	297.0	58	8909	153.6
Boys (High IQ)	20	1.30	264.7	26	5293	203.6
Middle Class, Ninth-graders, N Ach Stories						
Whites, Jewish						
Girls (Ave. IQ)	30	1.87	322.4	56	9671	172.7
Boys (Ave. IQ)	21	2.00	237.0	42	4977	118.5
Girls (High IQ)	16	3.06	344.3	49	5509	112.4
Boys (High IQ)	20	2.45	263.1	49	5262	107.4
Whites, Non-Jewish						
Girls (Ave. IQ)	20	1.85	292.2	37	5844	157.9
Boys (Ave. IQ)	22	1.09	238.2	24	5240	218.3
Girls (High IQ)	30	2.13	311.0	64	9331	145.8
Boys (High IQ)	30	1.43	285.0	43	8550	198.8
Total, Ninth grade						
Girls	353		296.0			143.6
Boys	312		240.8			168.5

Table 5a. Boys - Relative Usage of High Frequency Adjectives by Various Groups.

	Ninth-Graders														Sixth-Graders Inner City		Adults Middle Class	
	Inner City			Blue Collar				Rural		Upper Middle					Black		White	
	Black		White	Black		White		White		Jew		non-Jew			n Ach	Curi	n Ach	Curi
IQ Level	Av	Lo	Av	Av	Lo	Av	Hi	Av	Hi	Av	Hi	Av	Hi		Lo	Lo		
No. of Adj.	30	32	28	36	32	45	42	27	26	42	49	24	43		12	9	34	30
No. of Pers.	29	30	16	25	21	30	19	29	20	21	20	22	30		21	21	31	31
Black												.04						
Clean	.03					.02												.10
Dark		.03																
Deep				.08														
Happy		.03	.07	.03		.07	.07	.04		.10		.04	.16		.08	.22		
High	.20	.13	.18	.19	.25	.07	.24	.15	.12	.14	.16	.29	.21		.08		.47	.07
Human	.07				.03													
Important	.07	.03		.03	.06	.07	.05	.04	.04	.02	.08	.08	.02				.12	.07
Large					.03			.04		.02	.04		.02					.07
Left	.07			.03														
Modern	.03	.03											.02					
New	.07	.25	.32	.17	.16	.33	.33	.41	.46	.29	.24	.25	.16		.42	.56	.21	.27
Nice		.03	.07	.03	.03	.04	.02		.04	.02			.05					
Old	.10	.06	.18	.08	.13	.02	.07	.11	.04	.12	.06	.13	.16		.17	.22		.27
Poor						.04				.02	.22							
Pretty					.03					.02							.03	
Right	.10	.03	.04	.11		.33	.05	.07	.04	.05	.04	.13	.09		.08			
Soft						.02												
Straight										.02			.02					
White								.04	.08	.05	.04						.03	.03
Wonderful		.37															.03	
Young	.27		.14	.25	.28		.14	.11	.19	.12	.10	.04	.07		.17		.12	.13

Table 5b. Girls - Relative Usage of High Frequency Adjectives by Various Groups in N Ach Stories.*

	Inner City			Blue Collar				Rural		Upper Middle				Sixth-graders Inner City		Adults Middle Class	
	Black		White	Black		White		White		Jew		non-Jew		Black*		White	
IQ Level	Av	Lo	Av	Av	Lo	Av	Hi	Av	Hi	Av	Hi	Av	Hi	Lo	Lo*	nAch	Curi*
No. of Adj.	86	43	29	74	53	81	85	36	58	56	49	37	64	25	18	58	48
No. of Pers.	41	30	16	30	22	30	30	28	30	30	16	20	30	26	26	38	38
Black											.02		.03				
Clean							.01									.05	
Cold	.01					.02	.01										.02
Dark			.03		.02			.03		.02					.06	.02	
Deep							.01										.02
Happy	.10	.21	.10	.05	.04	.07	.05		.03	.07	.14	.08	.03	.20	.11	.07	.04
High	.07	.09	.10	.11	.04	.11	.11	.11	.12	.07	.12	.03	.03	.12		.16	.04
Human					.04												
Important	.06	.07	.14	.16	.11	.10	.14	.11	.31	.18	.08	.19	.12		.17	.05	
Kind						.01	.01			.02	.04						.02
Large	.01					.02	.04					.03	.02			.02	.15
Modern	.03				.02					.02							.02
New	.36	.19	.31	.28	.19	.32	.26	.25	.24	.27	.29	.35	.36	.20	.17	.24	.19
Nice	.01	.07	.10	.07	.09	.10	.08	.06	.03	.07	.02	.05	.08		.22		
Old	.02	.07		.08	.02		.07	.06		.05	.10		.03		.11	.10	.29
Poor	.01		.07	.03	.02		.04			.04	.02				.06		
Pretty	.02				.04	.01		.08	.02		.02	.05	.05	.04	.06	.02	
Right	.05	.09	.07	.12	.09	.10	.06	.08	.12	.11		.05	.05	.40			.06
Straight										.02							
Tall			.03														
White						.02	.02				.06	.03	.08		.06		
Wonderful	.01	.02	.03	.01	.09	.02		.08	.02	.04	.06	.03	.03			.05	.02
Young	.22	.19		.08	.19	.07	.09	.14	.10	.04	.02	.11	.09	.04		.22	.12

*For 6th-graders and adults stories written to curiosity-evoking pictures were also analyzed. These are given in the right hand column in both cases.